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COUNTRY: USSR (UR)

REPORT NO:

1 517 0016 86

TITLE: Manufacture of New Multi-stage Missiles by Four New Branches
of the Artem Plant in Kiev (U)DATE OF INFO: 720500
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ORIGINATOR: Det 21, AFSAC

REQ REFERENCES: A-FSC-43240
A-FSC-42648, T-11X-43206

SOURCE: (C/NF/NN) WASH-3889. Source was a fifth category fitter on a construction brigade of the Plant i/n Artem in Kiev, Ukrainian SSR, from 1950 through May 1972. He worked on the construction of the main Artem plant, housing facilities for Artem workers, and the branch plants at Zhulyany and Shchors.

SUMMARY: (C/NF) The Plant i/n Artem in Kiev began a high-priority, rapid, large-scale expansion in 1968 or 1969 that coincided with very secret work on a large, 11-meter-long, multi-stage missile (possible SAM or ABM). This was a departure from the plant's traditional work on smaller air-to-air missiles. A number of characteristics made this expansion curious. The expansion had high priority from the senior leadership of the Artem plant and from leadership above that. This priority resulted in overtime work by the construction brigades on holidays and normal days off to rapidly complete the construction of the new branch plants. Four branch plants (filiali) were constructed, one each at Zhulyany, Shchors, Vinnitsa (all less than 100 miles from Kiev), and an unidentified fourth location. At least at the Zhulyany branch plant, and possibly at the other three, work was being accomplished on a large, multi-stage missile. Work on this missile was very highly classified. Active concealment efforts were incorporated into the Zhulyany branch plant, apparently designed to prevent detection of work on this missile by US national technical means. This missile was completely assembled, crated, and loaded onto railroad cars under the roof of a single building. This report contains basic background information on the Artem Plant and its branch plants. More extensive information is provided on the branch plant at Zhulyany and the production of the multi-stage missile there beginning probably in the Spring of 1971, to include descriptions of the facility, buildings, the missile, assembly procedures, production data, crating, loading, and shipping.5
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DETAILS: (U)

1. (C/NF) Artem Main Plant:

a. (C/NF) Designation: The Plant i/n Artem was designated P/YA (Pochtoyy Yashchik) 50. Its address was Ulitsa Glubochetsa Number 1, Kiev (5026N/03031E, NIS), Ukrainian SSR, USSR. It employed approximately 18,000 personnel.

b. (C/NF) Mission: The mission of the Artem main plant was the design, testing, and production of missiles (raketi). The Artem plant originally was involved in the construction of air-to-air missiles. Sometime in the mid to late 1960s, the plant began work on larger multi-stage missiles. (Originator's Comment: Source was unsure of the purpose of these large missiles. He thought they were too small to be ballistic missiles, but obviously too large to be air-to-air missiles. There were very few rumors about these large missiles, and the source never asked others about them because the project was kept very secret.)

c. (C/NF) Branch Plants: There were four branch plants affiliated with the Artem plant. They were located at Zhulyany, Shchors, Vinnitsa, and at an unidentified fourth location.

(1) (C/NF) Zhulyany Branch Plant: Construction began on a branch plant in the vicinity of Zhulyany (5024N/03026E, NIS), Ukrainian SSR, in 1968 or 1969. The plant became operational sometime in early 1971. Construction of this plant was given high priority by the Artem leadership, demonstrated by the frequent appearance at the construction site of the Artem Plant Director, Vasilii Ivanovich VLASOV (died in 1978), and (FNU) STUKACH, who was the Chief Engineer and Head of the Design Bureau at the Artem main plant and later the Director of the Zhulyany plant. Workers continued plant construction on normal days off and national holidays. The Zhulyany branch plant employed even more than the 18,000 employed at the Artem main plant.

(2) (C/NF) Shchors Branch Plant: Construction began in the vicinity of Shchors (5149N/03156E, NIS), Ukrainian SSR, USSR, on a second branch plant in 1971 after the completion of the plant at Zhulyany. As with the Zhulyany plant, the Artem leadership placed a high priority on the rapid completion of this plant. (Originator's Comment: Source believed the priority of the construction of these branch plants originated at a level higher than the Artem plant leadership. He did not know exactly where this priority came from.) The Shchors plant was similar to the Zhulyany plant but on a much larger scale. It occupied approximately 400 hectares (899.4 acres). (Originator's Comment: Source worked on the construction of this plant for less than one year. He retired in May 1972, and at this point there was little more than foundation work completed. The rumors among co-workers were that this plant was to be used for the production of large missiles, not the smaller air-to-air type that earlier had been the mainstay of Artem production.)

(3) (C/NF) Vinnitsa Branch Plant: In about 1972, prior to the completion of the Shchors plant, construction began on two additional branch plants. One of these

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was in the vicinity of Vinnitsa (4914N/02829E, NIS)///, Ukrainian SSR, USSR. (Originator's Comment: Source could not remember the location of the fourth branch plant, but he knew one was built. He was never present at either the Vinnitsa or fourth branch plant construction sites.) The Vinnitsa branch plant was on the same scale as the Shchors plant, and rumors were it also was to be used to produce large missiles. As with the Zhulyany and Shchors plants, there was a high priority on the rapid completion of these plants.

Time Line of Branch Plant Construction

Branch Plant	1968	1969	1970	1971	1972	1973
Zhulyany	?+++++					
Shchors	+++++??					
Vinnitsa	?+++++					
4th Filial	?+++++					

Constructed simultaneously

d. (C/NF) Testing: Bench testing of missiles was conducted at the Artem plant in special soundproof rooms. These rooms were constructed of a special thickness of concrete to ensure that someone standing outside the plant on the street could not hear or detect that a missile engine was being tested. Once, in about 1966, an air-to-air missile exploded while being tested at Artem. A number of personnel were killed and others were injured. (Originator's Comment: Source knew about this because he had been called in to clean up and repair the facility.)

e. (C/NF) Shipping: Missiles produced at the Artem plant were packaged in hermetically sealed wooden crates (yashchiki) to ensure no moisture could damage the missiles. Each crate was inspected, sealed, and given a stamp/seal (pechat) by the military representative. The crates never had any markings referring to their origin at Artem or Kiev. In fact, the crates normally were marked with a false location of origin indicating some other city. Yaroslav often was written on the crates as the point of origin. After the crates were sealed, they were loaded onto trucks and driven to the Kiev train station where they were loaded onto train cars. The train cars, which were guarded by Artem plant security personnel, usually were taken to some location in Kazakhstan, USSR. (Originator's Comment: Source's information on the destination of these air-to-air missiles was very sketchy and based upon casual conversations with some of the Artem plant personnel who accompanied the train cars to

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Kazakstan. These personnel would be gone for a week or so, and if asked where they had been when they returned, they usually would say something unspecific, like "to Kazakstan." Source remembered Alma Ata (4315N/07657E, N18) being mentioned once, but did not know if this was the final destination or merely a stopover point. In at least one conversation, he recalled hearing that some of these missiles were sent to an underground military depot located somewhere in Kazakstan. (NFI)

2. (C/NF) Zhulyany Branch Plant:

a. Mission: The mission of the Zhulyany branch plant was the production of a large, multi-staged missile. (Originator's Comment: See section 2., c.) This missile was of the most recent technology and the production of it had a very high priority.

b. Description: The Zhulyany branch plant was located along the railroad line that ran southwest out of Kiev, and was accessed by a spur of this line. The spur made a complete loop and returned to the elektrichka main line. (Originator's Comment: See Figure 1: Facility Sketch - Zhulyany Branch Plant, for a more complete diagram. The buildings marked 2, 3, and 4 are treated in more detail below.)

(1) Korpus Number 1: The building marked as 2 in Figure 1 was known as Korpus No 1 (Building Number 1) or Glavnyy Korpus (Main Building). It was in this building that the missile described in section 2., c. was assembled. (Originator's Comment: See Figure 2: Building Layout - Korpus No 1.) The building was approximately 200 meters by 25 meters, with a single story, but a very high ceiling. Installed along the ceiling was a crane (portovoy kran) that had full three-dimensional capability. There were no windows on the exterior of the building, but there were two skylights on the roof to provide light to the building. There were two large gates at opposite ends of the building that allowed access to the railroad spur. In fact, as shown in Figures 1 and 2, the spur ran right through Korpus No 1. With both gates closed, a railroad engine and four flatcars could fit inside the building. (Originator's Comment: For details on the loading and shipping of the missile, see section 2., c., 3. Description of the missile, loading of the missile, and the interior layout and arrangement of the Korpus No 1 is based upon source's presence in this building for 15 minutes in May or June 1971. This was the only time source saw the missile described in section 2., c.) On side A (See Figure 2) of the railroad tracks, there were a number of tables and boxes containing missile parts. On side B of the tracks, there were an assembled missile, an "operator" station, and at least one but possibly a number of missile shipping crates.

(2) (C/NF) Building 3 and 4: These two buildings were responsible for the production of the various missile components. Some of these components might have been assembled into larger parts, but complete assembly of the missile was performed only in Korpus No 1.

c. (C/NF) Missile:

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(1) (C/NF) Description: (Originator's Comment: See Figure 3: Missile Sketch.) The missile produced at the Zhulyany branch plant was approximately 11 meters long and two-and-one-half meters wide, with multiple stages. (Originator's Comment: Source could not remember how many stages there were or where the breaks in the stages were.) It had two sets of major fins. One set of four fins was located at the tale of the missile. Another set of four fins was located halfway up the length of the missile. The missile also had two sets of minor fins. One set was located between the two sets of major fins; the other set was located just above the set of major fins located halfway up the length of the missile. The warhead was sharply pointed (not rounded) and was red in color. The rest of the missile was olive drab/green in color. (Originator's Comment: Figure 3 is a reproduction of the drawing the collector produced with the source. Source was unable to draw because of a problem with one of the fingers on his right hand. As a result, the collector drew this depiction as he walked the source through the missile from top to bottom, asking about fins, stages, the warhead, and color. Source was comfortable with the proportions in the drawing the collector produced. This is mentioned because the proportions in the drawing (Figure 3) do not agree with the measurements given by the source (i.e. 11 meters long and two-and-one-half meters wide). Other factors to consider are that the source only saw this missile once (for 15 minutes in the Spring of 1971 - 15 years ago) and that while being debriefed, source was not wearing the glasses he requires to read (a fact the collector only realized at the conclusion of the debriefing.) The collector will attempt to obtain a more thorough and accurate description during the next debrief, but thinks source's memory is the greatest factor limiting probable success.)

(2) (C/NF) Assembly Procedures: Assembly of the finished missile was accomplished only in Korpus No 1. Parts were produced in the buildings marked 3 and 4 on Figure 1, but final assembly was done in Korpus No 1. The missiles were assembled by a "special brigade for the assembly of missiles" (Spetsialnaya brigada po sborke raket). This brigade was composed of only five men, and they worked only two to three hours a day. These brigade members were among the best and most experienced workers at the plant and received very high salaries. They wore special all white smocks and pants.

(3) (C/NF) Production Data: Series production of this missile probably began in May or June 1971. (Originator's Comment: This was source's best estimate based upon the time it took to build the plant, his observation of traffic at the plant, and his viewing of the missile sometime during this two-month period. He thought the missile he saw was one of the first produced. Determination of the production rate and the number of missiles produced was very problematic. When first asked how many were produced, he said, very enthusiastically, "mnogo, mnogo!" (Many, many!). Tying him down to specifics, however, was much more difficult. At one point in the debriefing, source reported that some number less than 100 (one hundred) missiles were produced each quarter. He then agreed that this meant some number less than 400 were produced each year. Later in the debrief, however, when the collector again brought up the number 400, source said definitively, "No, not that many." Also problematic was that source had no firm basis for these numbers. He left Zhulyany by the early summer of

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1571 and began work at Shchors. He could not report on the number of crates observed, other than the three or four he saw during the 15-minute period in Spring 1971, and he could not provide any firm number of trains that passed through Korpus No 1. His numbers were based on his general impression of the production rate. It was his impression that a large number were produced, but he never asked anyone, including friends, because the missile was a very highly guarded secret. Only a very select group ever saw the completely assembled missiles. Source could not provide concrete data on production of this missile after his retirement in 1972 because, once again, this was not a project one asked even his friends about. Source was under the impression, however, that production continued.)

(4) (C/NF) Loading of Missiles: Once the missiles were assembled, they were crated, loaded onto railroad flat cars, and covered with tarpaulin, completely within Korpus No 1.

(a) (C/NF) Crating of Missiles: Missiles were loaded into their crates by remote control. An "operator," sitting at point 1 (See Figure 2) used a microphone and a control panel (pult) to control the movement of the missile. Through some combination of talking into the microphone and using the control panel, the operator was able to raise the missile about two meters off the ground, move it from point 2 to point 3, and lower it into its crate at point 3. The cover then would be placed on the crate and it would be sealed by the military representative. The crate for this missile was approximately 12 meters long and had Cyrillic letters and numbers written all over it. (Originator's Comment: Source reported that the missile raised, moved, and lowered itself under its own power. It was not raised by a crane or by a forklift. The only effect sensed by the source during the movement of the missile was the sound of a low hum. There was no change in smell and no visible effects. Source detected no spray of dust that might have been caused if the missile relied upon small rocket engines for its lift and movement. The collector asked the source about this a number of times, but source insisted this was in fact what he had seen. The collector suggested that perhaps the crane was used or that the source hadn't been able to see some type of lift vehicle being used. Source remained adamant, however, that the missile elevated itself. Whether or not this was in fact true, the collector concluded this was what the source indeed believed he saw. Source, however, observed this procedure only once, and then only for a period of about 15 minutes. In fact, the source should not have been in the building at the time. Normally, everyone was required to leave Korpus No 1 before a missile was crated. The only personnel permitted to stay were the "operator" and the military representative. In this case, however, source had a work order to repair some type of problem somewhere on side A (See Figure 2) of the building. He observed this entire procedure from somewhere in the vicinity of point 5. It is possible the flatcars obscured his view of some type of lift vehicle or that he was so surprised to see the missile that he did not notice cables that might have been attached to the overhead crane.)

(b) (C/NF) Loading of the Missile Crates: After the military representative sealed the missile crate, the crate was raised by the crane onto one of

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the railroad flatcars. (Originator's Comment: The one crate the source saw being loaded was the first to be placed on any of the four flatcars then inside the building. Judging from the size of the crate and the size of the flatcars, source believed two crates (positioned side by side) were loaded onto each flatcar. He also was under the impression that each flatcar then was covered with some type of tarpaulin. When all four flatcars were loaded for a probable total of eight crated missiles, the train would depart and a new one would arrive.)

(c) (C/NF) Shipping of the Missile: (Originator's Comment: Unlike with the earlier air-to-air missiles, the source had never talked directly to anyone who had guarded these crates after they left Zhulyany. He was under the impression, however, that these missiles also were sent somewhere in Kazakstan. Important to note is that unlike with the earlier air-to-air missile crates, which were trucked to the Kiev railroad station, the crates for these missiles were loaded directly onto railroad cars inside Korpus No 1 and then covered. Source never saw any of these crates on railroad cars at the Kiev railroad station even though he lived not that far from it.)

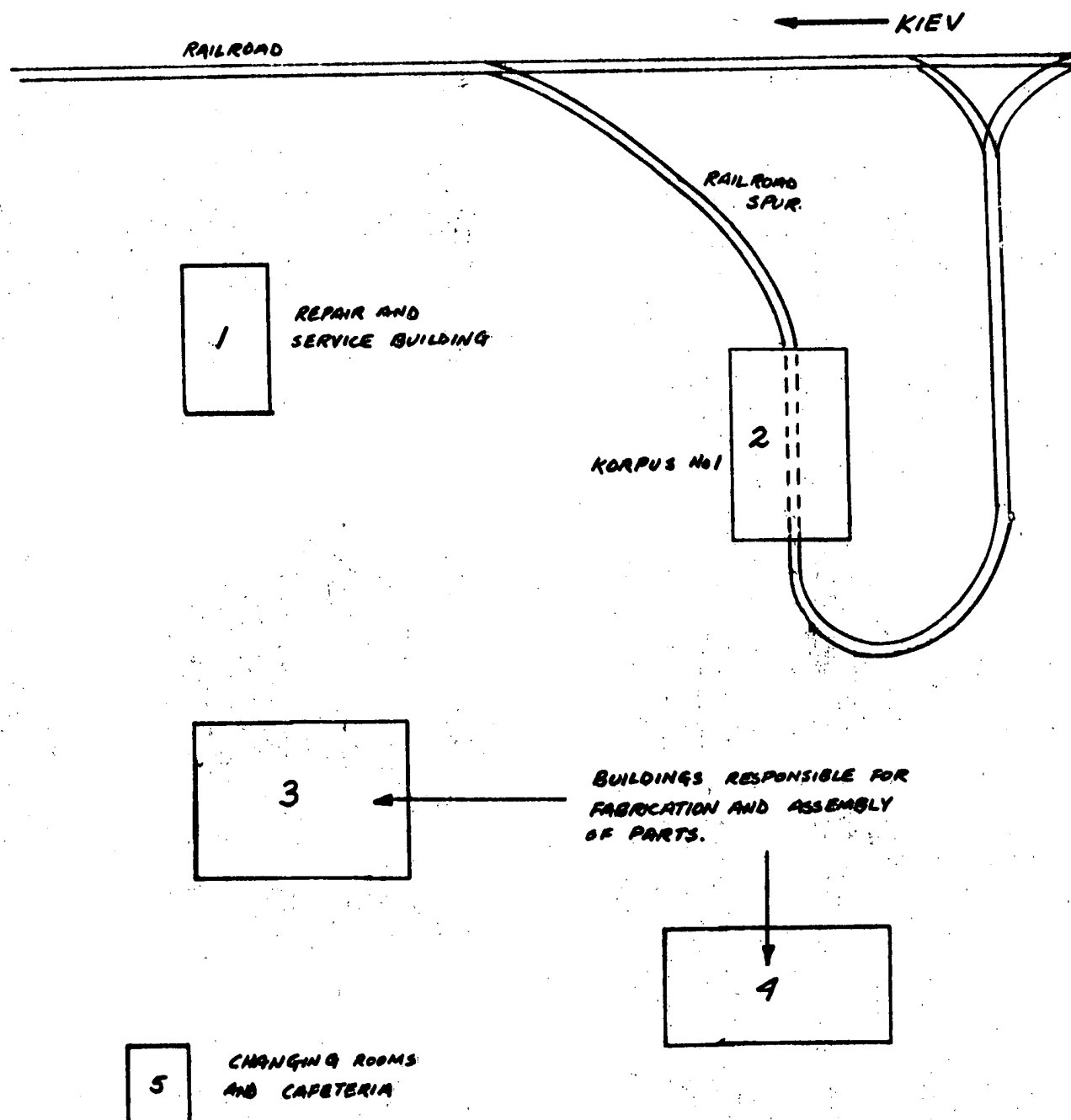
ORIGINATOR'S COMMENTS: (C/NF/WN) As is obvious from this report, source's memory was far from crystal clear and hindered accurate, detailed reporting. He is 70 years old, retired in 1972, and emigrated in 1978. In his seven years in the U.S., he has learned almost no English. A Russian linguist is absolutely necessary for further debriefing. He worked on a construction brigade and possesses only a secondary education. He appears to be sincere, but age is taking its toll on his memory. He personally expressed a willingness to be debriefed further, but there may be problems because of reservations by his family members. Further debriefing is planned in the near future to clarify production data, and to obtain more specific details on the branch plants at Zhulyany and Shchors.

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Figure 1 (C/NF): Facility Sketch-Zhulyany Branch Plant

(Memory Sketch, not to scale and not complete plant)



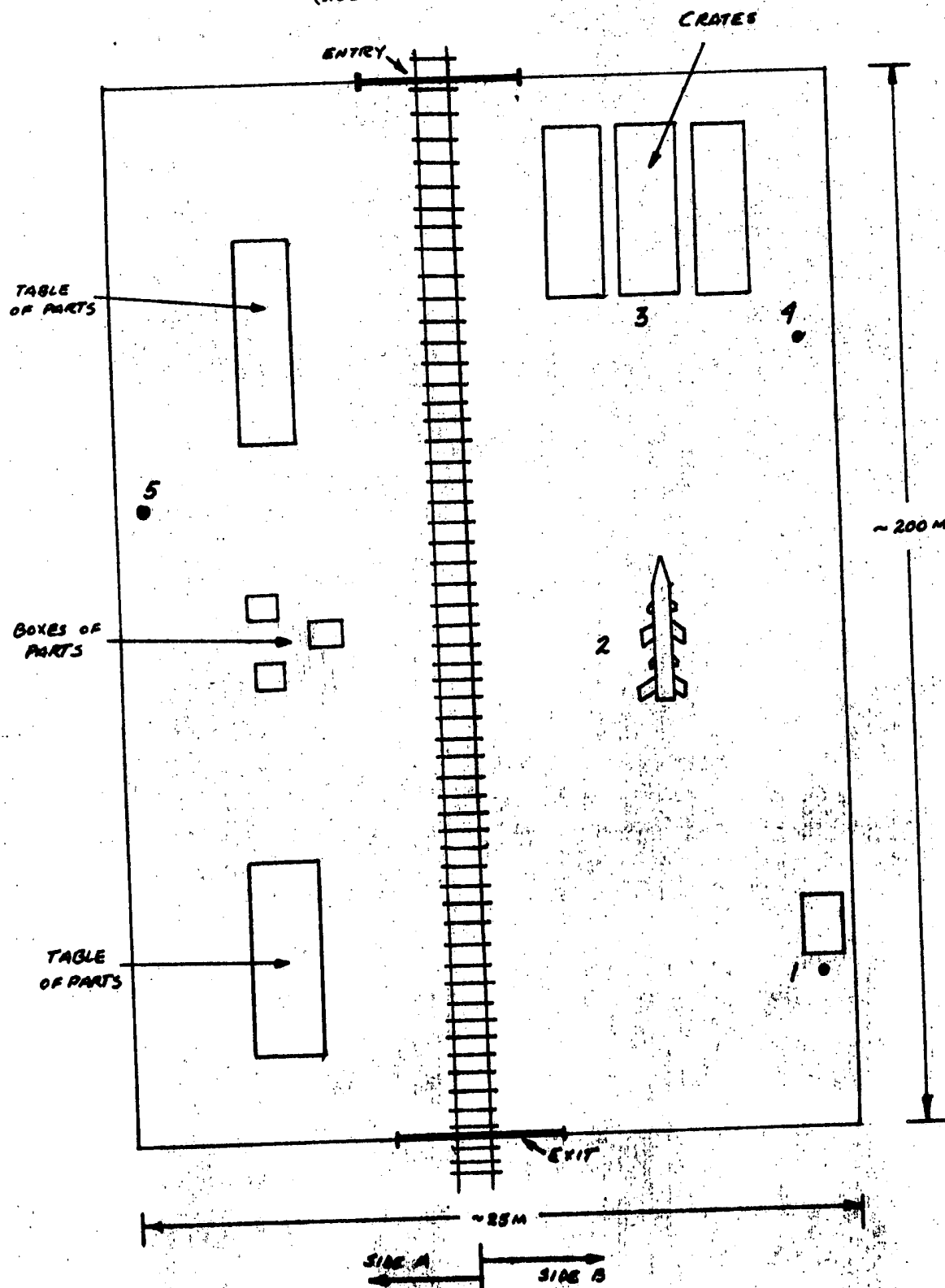
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Figure 2 (C/NF): Building Layout - Korpus No 1

(Not to scale)

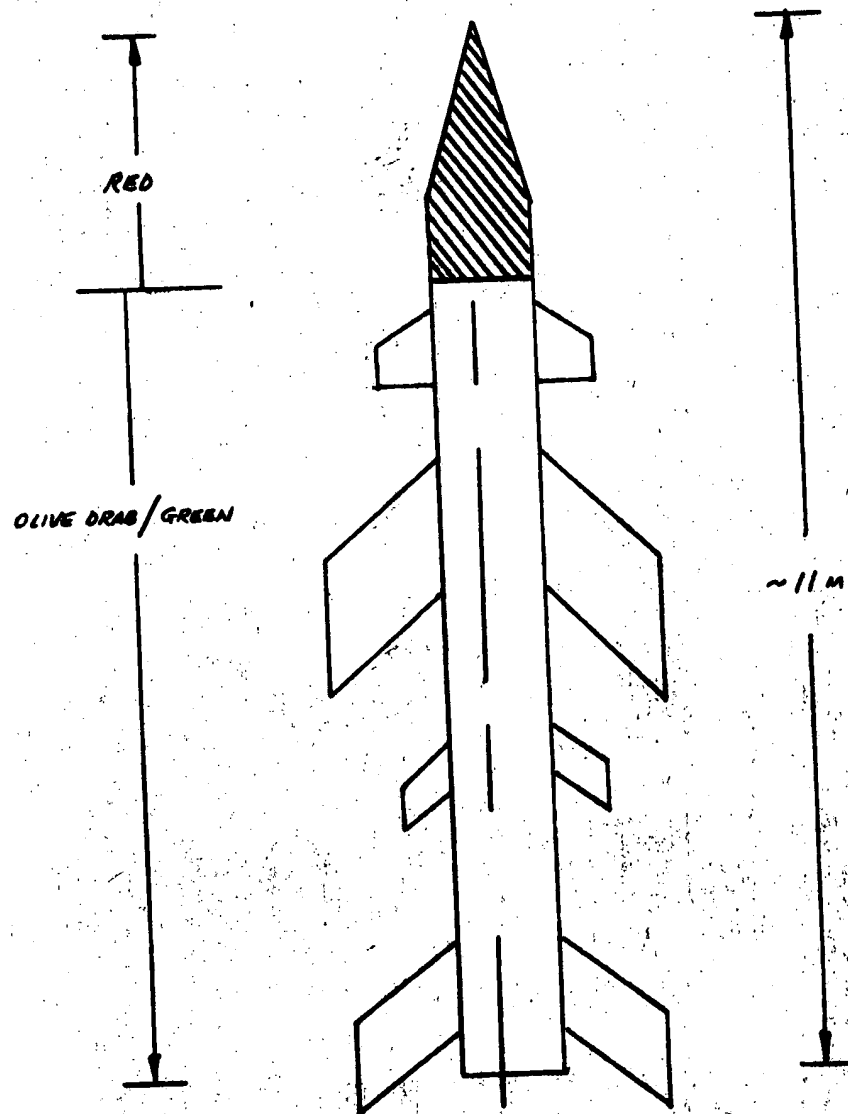


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Figure 3 (C/NF): Missile Sketch



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PREPARED BY: AF-21-050

(name, rank/grade, position)

APPROVED BY: (name, rank/grade, position, signature)

Kenneth J. Allen

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Commander

N/A- ENCLOSURE(S):

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